LISTING OF CLAIMS

This listing of claims, if entered, replaces all prior versions of the claims in this application.

1.   (Original) A method comprising:

creating a storage object corresponding to a storage volume, wherein said storage object
      comprises a point-in-time copy of said storage volume and a storage volume map;
      and

replicating said storage volume using said storage object.

2.   (Original) The method of claim 1, wherein said replicating said storage volume comprises,

periodically replicating said storage volume.

3.   (Original) The method of claim 1, wherein said creating a storage object comprises,

creating a storage object corresponding to said storage volume, wherein said storage
      object comprises a virtual point-in-time copy of said storage volume.

4.   (Original) The method of claim 1, wherein,

said creating a storage object comprises creating a first storage object corresponding to a
      first storage volume, wherein said first storage object comprises a first point-in-
      time copy of said first storage volume and a first storage volume map, and

said replicating said storage volume comprises copying data from said first point-in-time
      copy of said first storage volume to a second storage volume.

5.   (Original) The method of claim 4, wherein said copying data from said first point-in-time copy comprises,

synchronizing said first point-in-time copy of said first storage volume and said second
      storage volume.

Serial No.: 10/723,493

6.   (Original) The method of claim 4, wherein said copying data from said first point-in-time copy comprises,

   copying data from said first point-in-time copy of said storage volume to a point-in-time copy of said second storage volume, and

   restoring said second storage volume using said point-in-time copy of said second storage volume.

7.   (Original) The method of claim 4, further comprising:

   identifying a first set of one or more modified regions of said first storage volume using said first storage volume map.

8.   (Original) The method of claim 7, wherein said identifying a first set of one or more modified regions comprises,

   storing an extent, wherein said extent comprises a reference to a modified region of said first set of one or more modified regions and a length.

9.   (Original) The method of claim 7, wherein said creating a storage object further comprises,

   creating a second storage object corresponding to said first storage volume in response to said copying.

10.   (Original) The method of claim 9, wherein said creating a second storage object comprises,

   refreshing said first point-in-time copy of said first storage volume; and

   creating a second storage object corresponding to said first storage volume in response to said refreshing, wherein said second storage object comprises said first point-in-time copy of said first storage volume and a second storage volume map.

11.   (Original) The method of claim 10, further comprising,

   identifying a second set of one or more modified regions of said first storage volume using said second storage volume map.

12.   (Original) The method of claim 11, wherein said copying data from said first point-in-time copy comprises,

> copying data corresponding to said first set of one or more modified regions of said first storage volume from said first point-in-time copy of said first storage volume to said second storage volume using said first storage volume map.

13.   (Original) The method of claim 9, wherein said creating a second storage object comprises,

> creating a second storage object corresponding to said first storage volume wherein said second storage object comprises a second point-in-time copy of said first storage volume and a second storage volume map.

14.   (Original) The method of claim 13, further comprising,

identifying a second set of one or more modified regions of said first storage volume using said second storage volume map.

15.   (Original) The method of claim 14, wherein said copying data from said first point-in-time copy comprises,

> copying data corresponding to said first set of one or more modified regions of said first storage volume from said second point-in-time copy of said first storage volume to said second storage volume using said first storage volume map.

16.   (Original) The method of claim 9, further comprising:

detecting a failure of said first storage volume;

failing over from said first storage volume to said second storage volume in response to said detecting;

creating a third storage object corresponding to a point-in-time copy of said second storage volume; and

updating said second storage volume using said first storage object and said second storage object.

17.   (Original) The method of claim 16, further comprising:

resynchronizing said first storage volume with said second storage volume using said first storage object, said second storage object, and said third storage object.

18.   **(Currently Amended)** The method of claim 17**, further comprising:**

failing back from said second storage volume to said first storage volume.

19.   (Original) An apparatus comprising:

means for creating a storage object corresponding to a storage volume, wherein said storage object comprises a point-in-time copy of said storage volume and a storage volume map; and

means for replicating said storage volume using said storage object.

20.   (Original) The apparatus of claim 19, wherein,

said means for creating a storage object comprises means for creating a first storage object corresponding to a first storage volume, wherein said first storage object comprises a first point-in-time copy of said first storage volume and a first storage volume map, and

said means for replicating said storage volume comprises means for copying data from said first point-in-time copy of said first storage volume to a second storage volume.

21.   (Original) The apparatus of claim 19, further comprising:

means for identifying a first set of one or more modified regions of said first storage volume using said first storage volume map.

22.   (Original) The apparatus of claim 21, wherein said means for creating a storage object further comprises,

means for creating a second storage object corresponding to said first storage volume.

23.   (Original) The apparatus of claim 22, wherein said means for creating a second storage object comprises,

means for refreshing said first point-in-time copy of said first storage volume; and

Serial No.: 10/723,493

means for creating a second storage object corresponding to said first storage volume, wherein said second storage object comprises said first point-in-time copy of said first storage volume and a second storage volume map.

24.　(Original)　A machine-readable medium having a plurality of instructions executable by a machine embodied therein, wherein said plurality of instructions when executed cause said machine to perform a method comprising:

creating a storage object corresponding to a storage volume, wherein said storage object comprises a point-in-time copy of said storage volume and a storage volume map; and

replicating said storage volume using said storage object.

25.　(Original)　The machine-readable medium of claim 24, wherein,

said creating a storage object comprises creating a first storage object corresponding to a first storage volume, wherein said first storage object comprises a first point-in-time copy of said first storage volume and a first storage volume map, and

said replicating said storage volume comprises copying data from said first point-in-time copy of said first storage volume to a second storage volume.

26.　(Original)　The machine-readable medium of claim 25, said method further comprising:

identifying a first set of one or more modified regions of said first storage volume using said first storage volume map.

27.　(Original)　The machine-readable medium of claim 26, wherein said creating a storage object further comprises,

creating a second storage object corresponding to said first storage volume in response to said copying.

28.　(Original)　The machine-readable medium of claim 27, wherein said creating a second storage object comprises,

refreshing said first point-in-time copy of said first storage volume; and

　　　　Serial No.: 10/723,493

creating a second storage object corresponding to said first storage volume in response to said refreshing, wherein said second storage object comprises said first point-in-time copy of said first storage volume and a second storage volume map.

29.   (Original) A data processing system comprising:

a storage element to store a storage volume; and

a volume replicator configured to,

> create a storage object corresponding to said storage volume, wherein said storage object comprises a point-in-time copy of said storage volume and a storage volume map; and

replicate said storage volume using said storage object.

30.   (Original) The data processing system of claim 29, wherein said volume replicator is further configured to,

> create a first storage object corresponding to a first storage volume, wherein said first storage object comprises a first point-in-time copy of said first storage volume and a first storage volume map, and

copy data from said first point-in-time copy of said first storage volume to a second storage volume.